## Mountain Streams (59,364 Stream Miles in Montana)

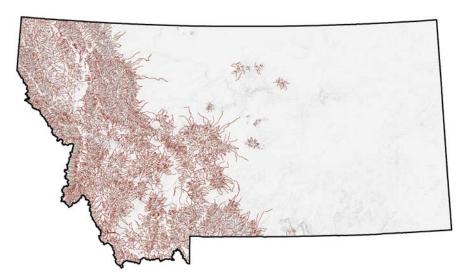


Figure 41. Distribution of Mountain Stream Community Types

Mountain streams of western and central Montana are typically cold and clear, and serve as the headwaters for all major river systems in Montana. Mountain streams often flow through montane conifer forests beginning at the highest elevations, and can range diversely from high-alpine, steep gradient reaches to low-gradient, meadow stream types (Stagliano 2005). These streams are home to abundant native fish species, which are the targets of anglers from around the country. Many of these native species are declining due to habitat degradation, dams, hybridization, overfishing, and being outcompeted by introduced salmonids. These streams support the remaining genetically pure stocks of Montana's Yellowstone and westslope cutthroat and bull trout.

## **Essential Associated Plant Community**

This information has not been defined for the mountain stream community type.

### **Associated Species of Greatest Conservation Need (Tier I Species)**

There are a total of 18 fish, mussel, and crayfish species that are found within the mountain streams community type, with 17 of these species being essentially associated (essentially associated species are shown in bold). All associations can be found in Table 44.

Invertebrates: Western Pearlshell

Fish: Yellowstone Cutthroat Trout, Westslope Cutthroat Trout, Columbia Basin Redband Trout, Bull Trout, and Arctic Grayling

# **Conservation Concerns & Strategies**

Conservation Concerns	Conservation Stratagies
	Conservation Strategies
Riparian habitats effected by roads,	Support government and private
housing developments, and range and	conservation activities that encourage
forest management practices that	and support sustainable land
degrade the adjacent riparian habitat	management practices in riparian
and stream channel	areas
	Modification of riparian management
	practices such that riparian vegetation
	is allowed to recover
	Develop statewide riparian best
	management principles
	Conservation easements and
	cooperative efforts to address human
	population growth and related impacts
	Work with Department of
	Transportation to mitigate for impacts
	of new and existing roads and
	highways
Stream dewatering	Implementation of various water
	conservation or flow management
	practices that restore essential habitats
	and simulate the natural hydrograph
	Protect instream flow reservations
	Increased installation of stockwater
	wells in place of irrigation ditches
	Increase instream flows through water
	leasing and water conservation
	measures
Entrainment of fish in irrigation	Screening or modification of irrigation
diversions	diversions or other water intakes in a
	manner that prevents entrainment of
	fishes
Stream channel alteration	Restoration of stream channels,
	streambanks and riparian areas to a
	condition that simulates their natural
	form and function
Introductions of non-native fishes	
Introductions of non-native fishes	Programs to help control exotic species
	and promote natural habitats that
	support native species

Protection of native species through habitat protection and enhancement,
controlling and in some cases removing non-native species, and
restoring or introducing native fishes
into suitable waters

#### References

Fuller, P. L., G. Nico, and J. D. Williams. 1999. Nonindigenous fishes introduced into inland waters of the United States. American Fisheries Society, Bethesda, MD.

Marcuson, P.E. 1977. Overgrazed streambanks depress fishery production in Rock Creek, Montana, pp. 143–156. In: Proc. of the workshop on livestock and wildlife-fisheries relationships in the Great Basin. University of California, Agricultural Station, Sci. Spec. Publ. 3301, Berkeley, CA.

Platts, W. S. 1991. Livestock grazing, pp. 389–424. In: W. R. Meehan, ed. Influences of forest and rangeland management on salmonid fishes and their habitats. American Fisheries Society Special Publication 19:389–423.

Platts, W. S. 1989. Compatibility of livestock grazing strategies with fisheries, pp. 103–110. In: R. E. Gresswell, B. A. Barton, and J. L. Kershner, eds. Practical approaches to riparian resource management. U.S. Bureau of Land Management, P.O. Box 36800, Billings, MT.

Platts, W. S. 1981b. Influence of forest and rangeland management on anadromous fish habitat in western North America: 7. Effects of livestock grazing. U.S.D.A. Forest Service General Technical Report PNW-124.

Rahel, F. J. 2002. Homogenization of freshwater faunas. Annual Review of Ecology and Systematics 33:291–315.

Rahel, F. J. 2000. Homogenization of fish faunas across the United States. Science 288:854–856.

Rahel, F. J. 1990. The hierarchical nature of community persistence: a problem of scale. American Naturalist 136:328–334.

Schulz, T. T., and W. C. Leininger. 1990. Differences in riparian vegetation structure between grazed areas and exclosures. Journal of Range Management 43:295–299.

Stagliano, D. M. 2005. Aquatic Community Classification and Ecosystem Diversity in Montana's Missouri River Watershed. Report to the Bureau of Land Management. Montana Natural Heritage Program, Helena, Montana. 65 pp. plus appendices.

Tennant, Donald. Instream Flow Regimes for Fish, Wildlife, Recreation, and Related Environmental Resources (Billings, Mont.: U.S. Fish and Wildlife Service, 1975).